

STABILITY TO HIGH TEMPERATURES OF THE ANTIMICROBIALS USED IN OUTPATIENT PARENTERAL ANTIMICROBIAL THERAPY PROGRAMMES

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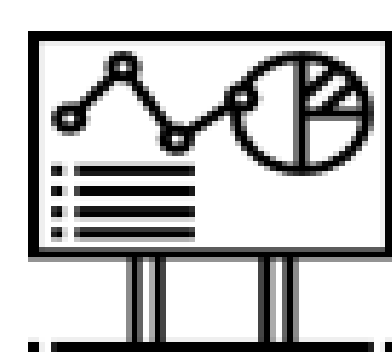
OBJECTIVE:

To collect high temperature stability data (35-37°C) of the antimicrobials used in an OPAT program

MATERIAL AND METHODS:

Antimicrobials used in the OPAT program of two third level hospitals were compiled.

- Different sources of information were consulted (data sheet, Stabilis[®] and Micromedex[®]) to find stability studies for each antimicrobial at high temperatures (**35°C to 37°C**).
- Data was classified in three groups:
 1. Antimicrobials with stability data at concentrations used in OPAT.
 2. Antimicrobials with stability data at other concentrations.
 3. Antimicrobials without stability data.



RESULTS: The stability of **24 antimicrobials** was studied:

- Stability studies were found at the temperatures mentioned (35-37°C) for the concentrations used in the OPAT program (16.66%)

Antimicrobial	OPAT program concentration	Stability data (35-37°C): Time and concentration
Acyclovir	3-5 mg/ml	2 weeks (3-5 mg/ml)
Cefazolin	12.5-25 mg/ml	12 hours (12.5-25 mg/ml)
Gentamicin	1-3,5 mg/ml	96 hours (2.5 mg/ml)
Voriconazole	2 mg/ml	4 hours (2 mg/ml)

Antimicrobials **without** studies at high temperatures (33.33%):

- Amphotericin B
- Cloxacillin
- Ertapenem
- Foscarnet
- Fluconazole
- Ganciclovir
- Sulbactam
- Teicoplanin.

- There was stability data, but for concentrations other than those used in clinical practice (50%)

Antimicrobial	OPAT program concentration	Stability data (35-37°C) Time and concentration
Aztreonam	12 mg/ml	24 hours (60 or 100 mg/ml)
Ampicillin	24 mg/ml	24 hours (0.0125 mg/ml)
Cefepime	12-24 mg/ml	4 hours (0.5 mg/ml) 13 hours (50 mg/ml)
Ceftazidime	24 mg/ml	2 hours (0.1 mg/ml) 8 hours (120 mg/ml)
Ceftriaxone	16-20 mg/ml	2 weeks (10 mg/ml)
Clindamycin	10 mg/ml	24 hours (0.25 mg/ml)
Daptomycin	5-8 mg/ml	6 hours (100 mg/ml)
Meropenem	8-10 mg/ml	4 hours (5 mg/ml)
Piperacillin-tazobactam	48 mg/ml	24 hours (128/16 mg/ml)
Penicillin G	0,024-0,036 MUI/ml	5 hours (0.13 MUI/ml)
Tobramycin	3-4 mg/ml	3 weeks (20 mg/ml)
Vancomycin	4 mg/ml	4 days (1 mg/ml)

CONCLUSION:

- Stability data at high temperatures is scarce for the antimicrobials used in the OPAT program. It would be convenient to carry out the corresponding studies.
- In warm environments, where the OPAT program is established, antimicrobials and their concentrations should be adapted to the available information.

